

Project Baseline Summary Report

Data Source: **EM CDB**
Operations/Field Office: **Oak Ridge**
Site Summary Level: **Oak Ridge Reservation**
Project **OR-411 / ETTP Waste Operations**

Report Number: **GEN-01b**
Print Date: **3/9/2000**
HQ ID: **0132**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

This PBS covers the Waste Operations activities at the East Tennessee Technology Park. Below are the facilities and activities included:

TSCA Incinerator - The TSCA Incinerator is a rotary kiln thermal treatment facility with a secondary combustion chamber and a wet off-gas cleaning system. This 24-hour operation treats hazardous, low-level radioactive, and PCB contaminated wastes for DOE to meet federal facility agreements, state commissioners orders, and DOE goals. The facility is operated in a manner, which meets the various environmental permits, and approvals and other requirements established by the facility baseline safety documentation. The waste streams include organic liquids, aqueous wastes, and solids waste streams such as personal protective equipment, spill cleanup material, soils, sludges, debris, wood, and other combustibles materials. The TSCA Incinerator remains as the only thermal treatment option in the DOE complex for PCB wastes with radioactive contamination. Beginning in FY 2001 the TSCA Incinerator will recover its variable costs through a chargeback to waste generators. Operations will continue through 2003. Decommissioning and Decontamination are planned for FY 2004 and FY 2005.

Central Neutralization Facility (CNF) - The CNF process includes waste receiving/certification, treatment, monitoring, compliance analysis, and discharge. The operation consists of the primary treatment facilities and four new collection and transfer facilities which consists of ground water wells/sumps, collection tanks, phase separators, instrumentation, transfer lines and filters.

Transportable Vitrification System (TVS) - TVS is currently in cold shutdown. This statement covers the work required to maintain TVS in its current cold shutdown mode through FY 2000 to support for inspections, tours, maintenance, and site housekeeping. A RCRA Closure is planned for FY 2001.

Project Status in FY 2006:

In FY 2006, ETTP Waste Operations will consist of wastewater treatment operations at the Central Neutralization Facility.

Post-2006 Project Scope:

Operation of the ETTP Central Neutralization Facility will continue through FY 2010 when it will be transitioned to the non-EM organization operating the ETTP.

Project End State

The ETTP Waste Operations EM Mission of treating legacy and EM newly generated will continue until the TSCA Incinerator is decontaminated and decommissioned and the Central Neutralization Facility is transitioned.

Cost Baseline Comments:

This PBS costs are based on extrapolation estimates. Extrapolation estimates are derived from historical cost data and based on a required level of effort to perform a task and upon a historical production quantity. One example of an extrapolation estimate used in this PBS is an estimate for the

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Project Description Narratives

operation of a waste handling facility. In this example, the only available data might be the quantity of wastes handled per year and some historical costs for the different sub-operations of the facility over a given duration. To prepare a new estimate for planned out-year operations, extrapolations of these actual costs are adjusted with logic from more recent cost trends and the Managing & Integrating Contractor approach/expectations.

Safety & Health Hazards:

The most common environment, safety, and health issues are associated with handling material that is contaminated; radiological or chemical, or the handling of chemicals. This activity includes hazards such as the operation of heavy equipment, manually handling the material (ergonomics), pinch points, slips - trips - and falls, and the use of hand and portable power tools. The chemicals themselves (i.e. sodium hydroxide, hydrogen peroxide, sulfuric acid) may also pose a hazard to the employee, the public, or the environment. Mishandling of these materials may cause an environmental insult such as excess emissions or a release.

Safety & Health Work Performance:

These activities are controlled by developing procedures that are in compliance with applicable permits and laws. In addition, the Work Planning and Permit Information System (WPPIS), pre-job briefings, Radiological Work Permits (RWP), and an Integrated Safety Management System are used as work control documents. A primary controller for these to work effectively is employee feedback.

PBS Comments:

Baseline Validation Narrative:

The Oak Ridge Operations Office Environmental Management Life Cycle Baseline (LCB) was submitted by the Managing and Integrating Contractor, Bechtel Jacobs Company LLC, to DOE-ORO on April 1, 1999. The final draft LCB will be submitted to DOE-ORO on June 1, 1999 after formal receipt and incorporation of comments. A validation of the baseline is in process using an independent contractor to DOE-ORO. The validation will be ongoing until complete and the final validation report is scheduled to be issued on June 25, 1999.

General PBS Information

Project Validated?	Date Validated:
Has Headquarters reviewed and approved project?	No
Date Project was Added:	3/10/1999
Baseline Submission Date:	7/1/1999
FEDPLAN Project?	Yes

Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	N	Y	N	N	N	Y	Y	N

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Project Identification Information

DOE Project Manager: Clayton Gist
DOE Project Manager Phone Number: 423-576-6821
DOE Project Manager Fax Number: 423-576-6074
DOE Project Manager e-mail address: gistcs@oro.doe.gov
Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006	
PBS Baseline (current year dollars)	240,102	15,367	255,469	27,691	26,120	26,029	25,809	20,860	20,432	17,603	16,910	17,265	16,345	73,320	3,647	
PBS Baseline (constant 1999 dollars)	225,863	12,611	238,474	27,691	26,120	26,029	25,809	20,860	20,012	16,886	15,888	15,888	14,732	64,724	3,153	
PBS EM Baseline (current year dollars)	240,102	15,367	255,469	27,691	26,120	26,029	25,809	20,860	20,432	17,603	16,910	17,265	16,345	73,320	3,647	
PBS EM Baseline (constant 1999 dollars)	225,863	12,611	238,474	27,691	26,120	26,029	25,809	20,860	20,012	16,886	15,888	15,888	14,732	64,724	3,153	
	2007	2008	2009	2010	2011- 2015	2016- 2020	2021- 2025	2026- 2030	2031- 2035	2036- 2040	2041- 2045	2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS Baseline (current year dollars)	3,723	3,801	3,881	3,962	0	0	0	0	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	3,153	3,153	3,153	3,152	0	0	0	0	0	0	0	0	0	0	0	0

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	2007	2008	2009	2010	2011- 2015	2016- 2020	2021- 2025	2026- 2030	2031- 2035	2036- 2040	2041- 2045	2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS EM Baseline (current year dollars)	3,723	3,801	3,881	3,962	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	3,153	3,153	3,153	3,152	0	0	0	0	0	0	0	0	0	0	0	0

Baseline Escalation Rates

1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%	0.00%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%
2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project:

Current Projected End Date of Project: 9/30/2010

Explanation of Project Completion Date Difference (if applicable):

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	Actual 1997 Cost:	26,120	Actual 1998 Cost:	25,809
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	-51,929	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):	-1,402	
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	-53,331			

Project Cost Changes

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Project Reconciliation

Cost Adjustments Reconciliation Narratives

Cost Change Due to Scope Deletions (-):

Cost Reductions Due to Efficiencies (-):

Cost Associated with New Scope (+):

Cost Growth Associated with Scope Previously Reported (+):

Cost Reductions Due to Science & Technology Efficiencies (-):

Subtotal: -53,331

Additional Amount to Reconcile (+): 238,085

Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars): **184,754**

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
ETTP Waste Operations - Project Start Milestone	OR411-001		10/1/1996								
ETTP Waste Operations - Project End Milestone	OR411-002		9/30/2010								
ETTP Waste Operations Mission Completion	OR411-003		9/30/2010								

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
ETTP Waste Operations - Project Start Milestone	OR411-001			Y							ETTP Waste Operations Project Start Milestone
ETTP Waste Operations - Project End Milestone	OR411-002				Y						ETTP Waste Operations Project End Milestone
ETTP Waste Operations Mission Completion	OR411-003					Y					

Performance Measure Metrics

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Project OR-411 / ETTP Waste Operations

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planned 2004
MLLW														
Treatment	M3	575.60	0.00	575.60	0.00		0.00			123.20	165.40	147.30	139.70	
MLLW														
Storage	M3							0.00	0.00	104.10	72.20	40.30	8.40	0.00
MLLW														
Comm. Disp.	M3	6,383.30	2,041.60	8,424.90	0.00		0.00	0.00	0.00	355.40	241.40	283.40	241.40	2,042.40
LLW														
Treatment	M3	0.00	0.00	0.00	0.00		0.00							
LLW														
Ship to DOE Disp.	M3	6.00	4.00	10.00	0.00		0.00				1.00	1.00	1.00	1.00
Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035	
MLLW														
Treatment	M3													
MLLW														
Storage	M3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
MLLW														
Comm. Disp.	M3	2,042.40	3,187.40	31.90	31.90	31.90	31.90	31.90	159.50	159.50	159.50	159.50	159.50	
LLW														
Treatment	M3													
LLW														
Ship to DOE Disp.	M3	1.00	1.00	1.00	1.00	1.00	1.00	1.00						

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Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
MLLW										
Treatment	M3									1,294.60
MLLW										
Storage	M3	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
MLLW										
Comm. Disp.	M3	159.50	159.50	159.50	159.50	159.50	159.50	159.50		8,494.90
LLW										
Treatment	M3									7.00
LLW										
Ship to DOE Disp.	M3									10.00

Technology Needs

Site Need Code: **ORWM-13**

Site Need Name: **Metals Monitoring of Gaseous Emissions**

Focus Area Work Package ID: **MW-06**

Focus Area Work Package: **Monitoring and Removing Hazardous and Radioactive Contaminants from Off Gas Streams**

Focus Area: **MWFA**

Agree with Technology Link: **Y**

Benefits (Cost, Risk Reduction, Both): **Both**

Technologies

	<u>Cost Savings (in thousands of dollars)</u>	<u>Range of Estimate</u>
Test Beds for Process Testing	0	
Development of a Multi-Element Metal CEM/Compliance Monitoring	0	
MIT Multi-Metal Emission Monitor	0	
Multiple Metal Continuous Emissions Monitor (CEM) Evaluation at oak Ridge TSCA Incinerator	0	
Monitoring and Removing Hazardous and Radioactive Contaminants from Offgas Streams	0	

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Technology Needs

Surface Acoustic Wave Mercury Vapor Sensor

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